The Quality of Life of Patients with Liver Cirrhosis Hospitalized at Dr. Sardjito Hospital, Yogyakarta

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ABSTRACT

Liver cirrhosis is a chronic and irreversible disease. The patients quality of life (QOL) may be impaired because of long-standing burden of the disease. This research was a cross-sectional study conducted at Dr. Sardjito Hospital, Yogyakarta to determined the QOL of patients with liver cirrhosis who hospitalized in this institution. The parameter for the QOL was measured according to Spitzer index. Sixty-five patients with liver cirrhosis of various etiology were abled to be studied. The number of male and female patients were almost equal (30 and 35 respectively). There was a reduction in QOL in both male (21/30) and female (28/35) but no significant different between this variable. There was a significant positive correlation between Child criteria, and nutritional status with QOL ($r=0.68$, $p<0.05$ and $r=0.37$, $p<0.05$). It was concluded that Child criteria and nutritional status were positively correlated with QOL.

Key words: *Liver cirrhosis, quality of life, nutritional status.*

INTRODUCTION

Cirrhosis is a chronic and irreversible liver disease, anatomically marked by presence of diffused liver fibrosis with regeneration nodules resulting from hepatocellular necrosis caused by various etiologies. Complications that occur are due to portal hypertension and deterioration of liver function.[1]

According to Adenan et al (1990), the most commonly found complaints among in-patients with liver cirrhosis at Dr Sardjito Hospital were ascites, hematemesis, and/or melena, encephalopaty, fatigue, and yellow eyes.

Cirrhosis is a late or terminal chronic liver disease. Like other chronic diseases, the medical and non-medical means of therapy are aimed to overcome complications, and thereby directly decreasing patient mortality rate.[3]

Younossi & Guyatt (1998) mentioned the patient's quality of life as a part of the outcome of therapy. Therefore, it is mandatory to evaluate the patient's quality of life in routine management of the patient. The results of further evaluation can be taken into consideration in making decisions for further management of the treatment.[3]

Lately, numerous studies about the quality of life of patients suffering from chronic diseases have been conducted, beside the routine biomedical assessment. Some researches on quality of life that have been conducted are that in patients with chronic renal disease,[5] post myocardial infarction, and cancer.[6]

Research on the quality of life in the field of gastro-hepatology has been conducted on post-hepatic transplantation patients,[7] evaluation on interferon therapy on the patients with chronic hepatitis C,[8] comparison of the quality of life of patients with chronic hepatitis C with normal population and the patients with Inflammatory Bowel Disease (IBD).[9]

Even though there has not been any specific research on the quality of life of patients with liver cirrhosis, the presence of ascites is thought to lower their quality of life. Thus, adequate management of ascites, either with drugs or by means of surgery, should be able to improve their quality of life.[10]

This research was conducted to determine the quality of life of patients with liver cirrhosis and to determine the factors influencing the quality of life of patients, such as clinical criteria (Child), nutritional status, sex, and age.

By knowing the quality of life of patients with liver cirrhosis and the influencing factors, we could determined the priority for secondary prevention against the morbidity factors that increase the quality of life of patients, or on the other way around.

MATERIAL AND METHOD

This study was conducted cross-sectionally on the patients of liver cirrhosis hospitalized at Dr Sardjito Hospital, Yogyakarta. The study took place at the Internal Medicine Unit of Dr. Sardjito Hospital, Yogyakarta, from January 1999 to October 1999.

The research subjects consisted of patients with liver cirrhosis diagnosed based on clinical features, laboratory findings, and ultrasound examination, hospitalized at Dr. Sardjito Hospital. Patients included in the research were patients with various etiologies of liver cirrhosis, such as viral hepatitis, alcohol, hematochromatosis, and billiary cirrhosis. Patients were included in the research if they were stable, without acute hematemesis, encephalopathy, sepsis, or tense ascites disturbing respiratory tract. Patients with chronic diseases such as cardiac decompensation, chronic renal failure, obstructive lung disease, diabetes mellitus, or those suffering from an acute episode of a disease were excluded from the study.

Prior to the commencement of the study, the patients were briefed on the purpose of the study, the methods, and usage. If the patient had no objections, then the study would be initiated in that patient. Medical history was taken while the patients were hospitalized, when they visited the polyclinic as an out-patient, and during home visits. Medical variables, such as the primary diagnosis, nutritional status and other conditions, were obtained from patient's medical record.

Determination of the patient's nutritional status was based on the circumference muscle of the upper arm (CUAM), circumference of upper arm (CUA), and the thickness of the fat of triceps muscle (TFTM), using the Bishop formula:

- CUAM = CUA – (0.314 x TFTM)
- CUAM > 85% of standard is considered to demonstrate adequate nutrition
- CUAM 71-85% of standard is considered to demonstrate mild malnutrition
- CUAM < 70% of standard is considered to demonstrate severe malnutrition

The parameter for the quality of life was based on an Indonesian translation of validated quality of life's index from Spitzer. The grade of liver cirrhosis was clinically determined based on Child-Pugh criteria.

Based on the study on the quality of life of patients with chronic liver disease undergoing liver transplantation, about 30-70% of patients have a reduced quality of life. Thus the sample size can be calculated using the following formula:

$$n = \frac{Z^2\ 1 - a/2\ p\ (1 - p)}{d^2}$$

p: proportion in population; d: precision

If the precision used is 0.10 with a co-efficient of reliability of CI=95%, and Z=1.960, then the number of samples is as follows:

$$\frac{(1.960)^2 \times 0.3\ (1-0.3)}{(0.1)^2} = 80 \text{ subjects of research}$$

From the collected data, we calculated the mean to be further analyzed using correlation analysis and chi-square to determine proportional data with a level of significance $p<0.05$.

RESULTS

In 10 months (January-October 1999), there were 65 qualified patients with liver cirrhosis, consisting of 30 men and 35 women. Distribution based on age and sex demonstrated that liver cirrhosis was found mostly in the group of people ages 60-69 years old (23 patients). The number of male patients with liver cirrhosis was almost the same as the number of female patients, with a ratio of 3:3.5 (Table 1).

Table 1. Distribution of Patients Based on Age to Sex

Age	Male	Female
<20	0	1
20-29	1	1
30-39	3	1
40-49	5	4
50-59	6	13
>70	3	4
Sum	30	35

X^2=4.52; p>0.05

In this study, we found no statistical difference on the Child criteria between male and female patients (Table 2).

Table 2. Distribution of Child Criteria Based on Sex

Child Criteria	Male	Female
A	10	9
B	12	15
C	8	11
TOTAL	30	35

X^2=0.477; p>0.05

There was no statistical difference on the nutritional status between male and female patients (Table 3).

Table 3. Distribution of Nutritional Status Based on Sex

Nutritional Status	Male	Female
Good	5	26
Poor	21	5
Severe malnutrition	4	4
TOTAL	30	35

X^2=23.83; p>0.05

In this study, there was a reduction in the quality of life of patients with liver cirrhosis. However, there was no statistically significant difference between men and women (Table 4).

Table 4. Distribution of Quality of Life Based on Sex

Quality of Life	Male	Female
Good	9	7
Poor	14	21
Very poor	7	7
TOTAL	30	35

X^2=1.27; p>0.05

In previous studies it was found that the Child criteria has an influence on the patients' quality of life. The same findings were obtained in this study, demonstrating a statistically significant relationship between Child criteria and the quality of life (Table 5).

Table 5. Distribution of Quality of Life Based on Child Criteria

Child	Good Quality of life	Average Quality of life	Poor Quality of Life
A	13	6	0
B	2	22	3
C	1	7	11
TOTAL	16	35	114

X= 44.655; p<0.05

This study determined that the nutritional status affects the quality of life, demonstrating a statistically significant relationship when analyzed (Table 6).

Table 6. Distribution of Quality of Life Based on Nutritional Status

Nutritional Status	Good Quality of Life	Average Quality of Life	Poor Quality of Life
Good	9	20	2
Poor	7	12	7
Severe malnutrition	0	3	5
TOTAL	16	35	14

Other than the data mentioned above, this study also found a positive correlation between the Child criteria and the quality of life (r=0.6819; p<0.05), as well as between the patient's nutritional status and quality of life (r=0.3715; p<0.05). On the other hand, there was no correlation between sex or age and the quality of life, resulting in an r of r=0.0490, p>0.05 and r=0.1107, p>0.05, respectively.

DISCUSSION

If untreated, the disease rapidly accelerates health state, loss of function, and discomfort. On the other hand, therapy itself could cause unpleasant side effects. Thereby, to understand these effects completely, treatment should take into consideration the patient's quality of life. Precise evaluation of the patient's quality of life would be useful to determine the disease process and the effect of the therapy given to the patients. The quality of life of patients with liver cirrhosis undergoing therapy should be assessed. Without treatment, patient with liver cirrhosis will die, be it caused by the disease itself or by its complications.[11]

In generally, the quality of life of patients with liver cirrhosis is reduced. This has been proved by various researchers. Vogel et al (1995) studied 620 patients with liver cirrhosis. The patients were followed for over 15 years and then compared to the normal population. It concluded that the quality of life of patients with liver cirrhosis was significantly different, in which the quality of life of patients with liver cirrhosis was generally worse.

In this study, none of the study subjects scored 10 on the quality of life. It could be inferred that liver cirrhosis patients treated in Dr Sardjito Hospital from January till October 1999 had a lower than normal quality of life. Specifically, there were 16 patients with scores 8-9 (24.6%), 35 with scores 5-7 (53.8%), and 14 with scores <5 (21.5%).

This study also proved that there were variables or factors positively correlated to the quality of life of patients with liver cirrhosis. These factors were Child criteria and the nutritional status of the patient, while age and sex had no correlation with the patient's quality of life.

A.1. Sex

Sixty-five people, consisting of 30 (46.2%) men and 35 (53.8%) women included in the study. Based on the analysis, sex did not influence the patient's quality of life (r=0.0490; p>0.05). From his study, Nose et al. (1995) concluded that males had a poorer quality of life compared with female. This difference might be due to

the difference in the number of subjects, where Nose et al had a larger number of men with cirrhosis due to alcohol.

A.2 Age

Another study involving 620 samples demonstrated no correlation between the quality of life, life expectancy and the age of patients with liver cirrhosis. This differs from this study, where age had no correlation with the quality of life of patients with liver cirrhosis ($r=0.1107$; $p>0.05$). Such difference might be due to an inadequate number of samples for comparison. Therefore, further study with large number of samples is necessary to determine the difference of results.

A.3 Child Criteria

The result of the correlation analysis between the quality of life with the Child criteria was $r=0.6819$, $p<0.05$. The results demonstrated a strong correlation between Child criteria and the quality of life. Previous studies also demonstrated the same result. Angeli et al (1998) concluded that Child criteria demonstrated a correlation with the quality of life of patients with liver cirrhosis. Vogel et al (1995) reported the same results.

A.4 Nutritional Status

Nutritional status was positively correlated with the quality of life ($r=0.3715$; $p<0.05$). Thus, it can be concluded that the worse the nutritional status, the worse also the quality of life. Study that analyzed the correlation between the nutritional status and the quality of life by searching for the correlation between the level of plasma albumin and the patients' quality of life has also been reported, demonstrating that lower levels of albumin was also correlated with a lower quality of life.

CONCLUSION

From this study, it can be concluded that 65 study subjects experienced a reduced quality of life. Factors positively correlated with the quality of life were nutritional status and Child criteria. Age and sex factors did not correlate with the quality of life.

This is a preliminary study on the quality of life of patients with liver cirrhosis. Further study with larger samples taking into account special aspects in the management of patients with liver cirrhosis is required.

REFERENCES

1. Merican L. Complication of cirrhosis. In: R. Guan, J.Y., Kang H.S. Ng (eds). Management of common gastroenterological problems. 2nd ed. 1995.p. 166-82.
2. Adenan H, Atmojo BTP, Soeliadi HW. Keluhan utama penderita sirosis hati di RSUP Dr. Sardjito Yogyakarta. Kumpulan Makalah KOPAPDI VII. Jilid III. Yogyakarta.1990; 131-8.
3. Ganz PA. Quality of life and patient with cancer. Individual and policy implications. Cancer. 1994.p.74:1445-52.
4. Younossi Z.M, Guyatt G. Quality of life assesments and chronic liver disease. Am J Gastroenterol 1998; 93: 1037-41.
5. Sja'bani M, Siswanto A, Sunarto H, Maduseno S & Asdie AH. Quality of life and functional status in patients with end stage renal disease who undergo chronic hemodialysis at General Hospital of Sardjito, Yogyakarta. Berkala Epidemiologi Klinik & Biostatistik Indonesia Vol. 1 No. 1, 1994.
6. Spitzer WO, Dospson AJ, Hall J, Levi J, Battista RN. Measuring the quality of life of cancer patients. A concide QL-index for use by physicians. J Chron Disease 1981; 34: 585-97.
7. Belle SH, Porayko MK, Hoofnagle JH, Lake JR, Zetterman RK. Changes in quality of life after liver transplantation among adults. Liver transplantation and surgery. Vol.3 No.2. 1997; 2: 93-104.
8. Davis GL, Balart LA, Schiff ER, Lindsay K, Bodenheimer HC, Perilo RP, Assesing health related quality of life in chronic hepatitis C using the sickness impact profile. Clin Ther 1994; 16(2): 334-43.
9. Irvine EJ, Feagan B, Rochon J, Archambault A, Fedorak RN, Groll A, Kinnear D, Saibil F, McDonald JW. Quality of life: a valid and reliable measure therapeutic efficacy in the treatment of inflammatory bowel disease. Canadian chron's relapse prevential trial study group. Gastroenterology 1994; 106(2): 2878-96.
10. Inturri P, Graziotto A, Rossaro L. Treatment of ascites old and new remedies. Dig Dis 1996; 14(3): 145-56.
11. Rabin L, Chedid A, Mendenhall CL, Gartside P, French SW, Chen T. Prognostic factors in alcoholic liver disease. VA Cooperative Study Group. Am J Gastroenterol 1991; 86(2): 210-6.
12. Vogel W, Propst A, Propst T, Zangerl G, Ofner D, Judmaier G. Prognosis and life expectancy in chronic liver disease. Dig Dis Sci 1995; Aug 40(8): 1805-15.
13. Nose Y, Sugimura T, Sakai H, Nawata H, Sakamoto M, Azakawa K. Etiology and prognosis of liver cirrhosis in elderly patients. Fukuoka Igaku Zasshi, Nov ed. 1995; 86(11): 411-6.
14. Angeli P, Merkel C, Morabito A, Sacerdoti D, Bolognesi M, Gatta A. Updating prognosis of cirrhosis by Cox's regression model using Child-Pugh score and aminopyrine breath test as time-dependent covariates. Am J Gastroenterol. Feb 1998; 86(2): 232-9.
15. Realdi G, Fattovich G, Hadziyannis S, Schalm SW, Almasio P, Tapias J, Christensen E, Giustina G, Noventa F. Survival and prognosis factors in 366 patients with compensated cirrhosis type B: a multicenter study. The investigators of the European Concerted Action on Viral Hepatitis (EUROHEP). J. Hepatol Oct 1994; 21(4): 656-66.